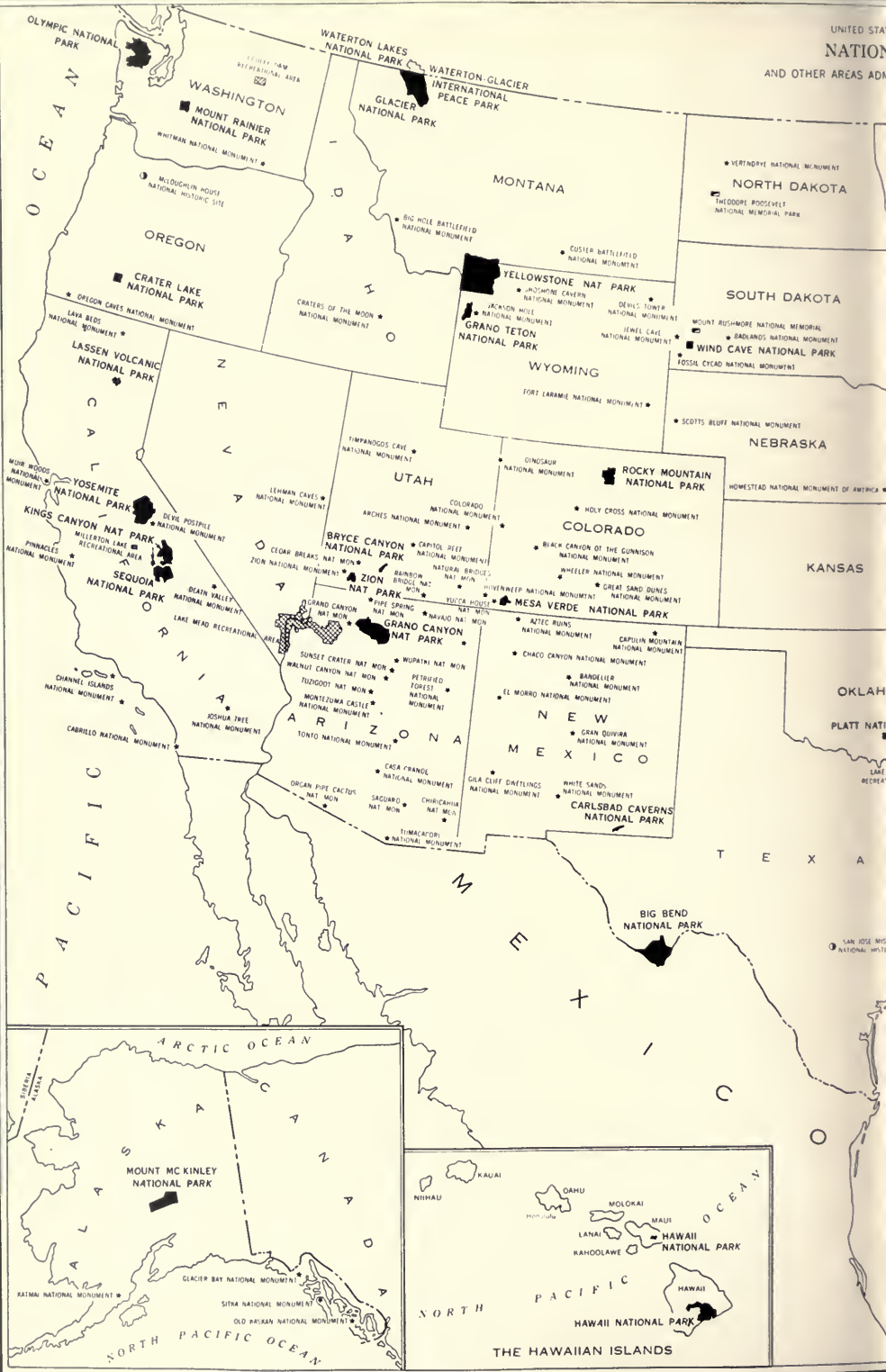




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Natural Landscapes *of the* United States

CHICAGO HISTORICAL
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Front Cover: *Glacier National Park*

Inside Cover: *The National Park System and Other Areas
Administered by the National Park Service*



Ocotillo, sahuaro, and other succulents in a typical desert landscape, Tucson Mountains Recreation Area, Arizona.

Natural Landscapes of the United States

BY

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White pine



Principal regions of natural vegetation in North America.

Natural Landscapes

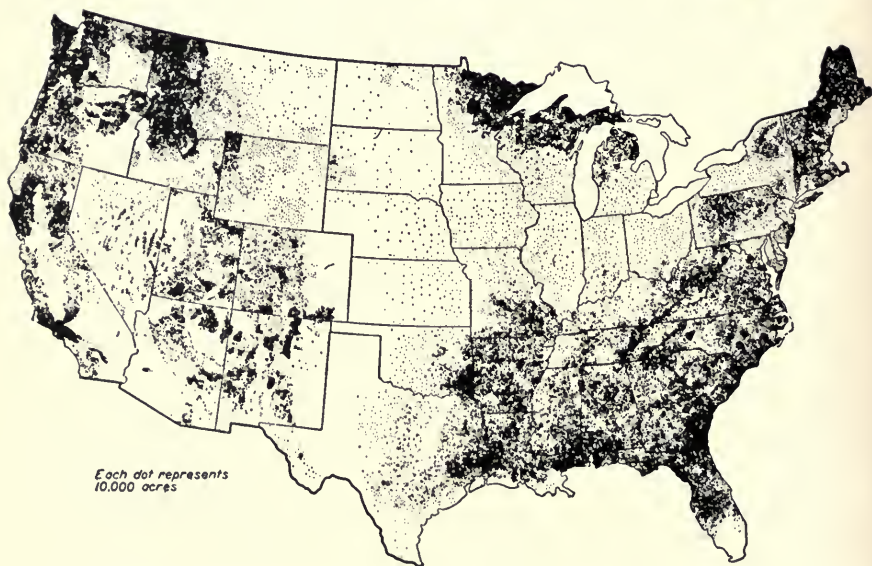
of the United States

The great naturalist Darwin said that every traveler ought to be a botanist, because plants make up a large part of every landscape. Certainly if the traveler knows something about the vegetation of the scene he views, his interest and enjoyment are immeasurably increased.

Principal Types of Vegetation

As may be seen on the accompanying map (see map, p. 6), the botanical division of the United States, while not as simple as the political one of Gaul, can in the most general way be based on the three main types of natural vegetation which everyone recognizes: namely, woods, grassland, and desert. These vary greatly in appearance with the kinds of trees and other plants that predominate in any given area; furthermore, they often merge with one another. Some of the more conspicuous variations of the three types of vegetation will be characterized by naming a few, a very few, of the plants that comprise them—in the main only the trees or other plants so striking and large that they may be seen from a moving automobile.

Originally a large portion of our country was covered with forests (see map, p. 8). Today these forests are much more limited and often protected by state or federal laws as part of our national heritage. A brief description of these forests may well serve as a starting point for our sightseeing trip through the eyes of a botanist.



Maps showing virgin forests (1620) and present forest areas.



National Forests of the United States.



Northern coniferous forest on Isle Royale, Lake Superior, Michigan.

First, it may be noted that the forests consist of two principal kinds: *coniferous* (trees that bear cones and usually have needle-like evergreen leaves) and *deciduous* (trees that lose their broad leaves completely at some seasons, becoming entirely bare). Although the leafy or broad-leaved trees may be evergreen in the subtropical areas, coniferous and deciduous forests are in many places more or less mixed.

Coniferous Forests

Northern Coniferous Forest

Let us begin our journey with a visit to the coniferous forests. Of these, three rather distinct geographical types are recognized. The largest area is occupied by the northern coniferous forest, known in frontier folk lore as having been the home of Paul Bunyan and his fabulous Blue Ox. This forest sweeps across Canada from Alaska



Northern coniferous forest in Glacier National Park, Montana.

to the Atlantic, extending, a little west of the Great Lakes, into Minnesota and Wisconsin and as far south as central Michigan, thence eastward through Pennsylvania and upper New York to the St. Lawrence. South of this area it merges with the deciduous forest that originally clothed the Ohio and Mississippi river valleys, and together they form a distinctive, if narrow, belt of mixed timber (see map, p. 6). The chief components of this forest, except the jack pine, extend far down along the Appalachians.

These northern coniferous forests (mostly Canadian) are striking in their uniformity. For hours on end one may journey across nearly pure stands of evergreens—white and red (or Norway) pine, hemlock, jack pine, and balsam fir—and often the trees grow so closely together that there is room only for small stands or isolated individuals of other kinds, such as tamarack, alder, willow, or poplar and aspen.

Atlantic and Gulf Coastal Plain Forests

Similarly, the coastal plain that extends roughly from Long Island to Florida and along the Gulf of Mexico to a few hundred miles beyond the delta of the Mississippi, is characterized by nearly pure stands of pines, southward especially longleaf and slash pines. The pine forests of the southern states, well known for their yield of “naval stores,” resin and turpentine, are now being exploited as a source of material for the manufacture of newsprint and kraft paper. Toward the interior, other species, such as the loblolly pine, are frequently associated with oaks and other deciduous trees and shrubs.

In this area, rolling pine lands with little or no ground cover except grass (using the term broadly) extend for great distances and because of this barren appearance are commonly known as pine-barrens. On the other hand, southward and westward into Mississippi and Louisiana a rich flora of herbs may be present in such forests. The pine lands, varying in type from one region to another, may be wet or may contain swamps such as the Great Dismal Swamp of Virginia or the Okefenokee Swamp of

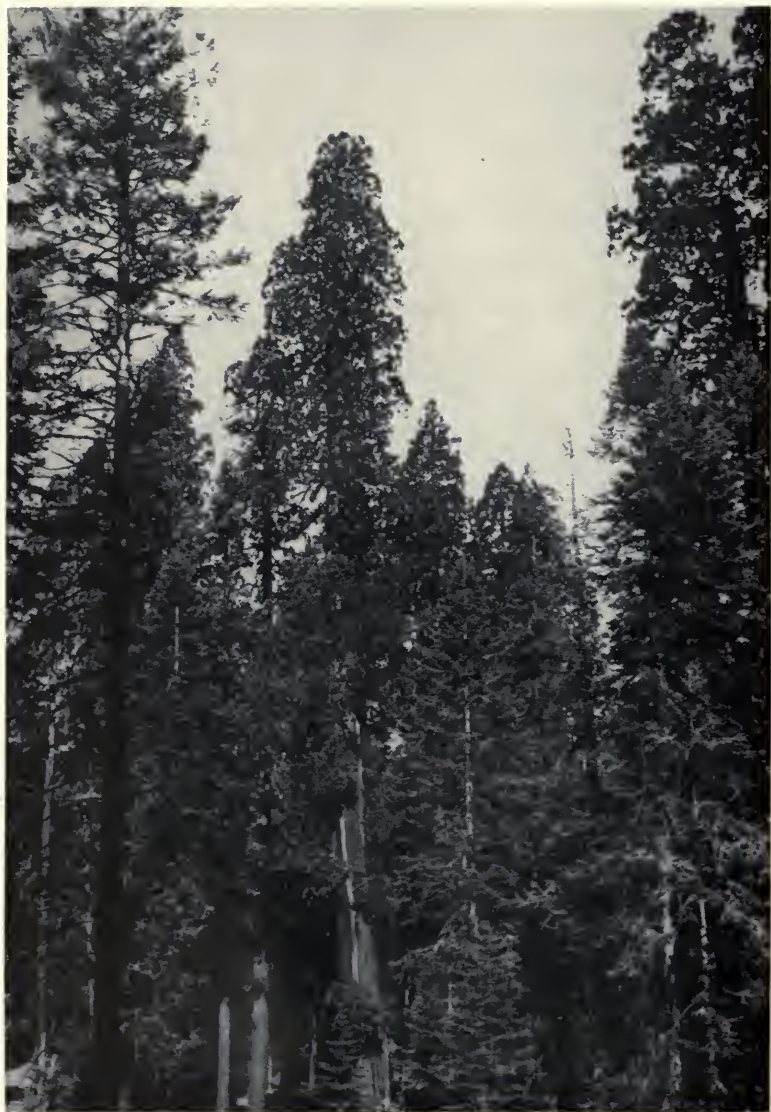


Stand of virgin longleaf pine in Choctawatchee National Forest, Florida,
characteristic of the coastal plain.

southern Georgia. They may also merge with deciduous forests, as in Florida, Louisiana, Arkansas, and Tennessee, or be found as isolated stands in areas where another type of vegetation predominates.

Western Coniferous Forest

But the greatest expanse of coniferous forests in this country is found in the West (see map, p. 6). Several pines and spruces, the hemlock, the great fir and the canoe



"Big trees" in Sequoia National Park, California.

cedar range from Alaska and western Canada southward nearly throughout the Rocky Mountains and along the coasts of Washington, Oregon, and California to the Sierras. In the California mountains they are overshadowed by the redwood and by the "Big Tree," or giant Sequoia, known at least by picture throughout the civilized world. The visitor to the groves of the giant Sequoia in the well-watered Sierra Nevada will see dense coniferous forests composed, in part, of yellow pine, sugar pine, Douglas and red firs, and some hemlock.

Throughout the coastal fogbelt of northern California and Oregon the redwood is often accompanied by the Douglas fir and the great fir. At lower levels the latter may be associated with other evergreens, like juniper or cypress trees. In the higher mountains one finds the white-

Redwoods in Bull Creek Flat, near Dyerville, California.





Monterey cypress, well known along the California coast, in Monterey Bay.

barked pine, and on Mount Shasta, above the yellow pine, is found a particularly noteworthy timber composed mostly of tall and stately fir.

A well-known conifer of the California coast is the Monterey cypress. The wind-contorted trees, many seemingly clinging to the rocky bluffs of Monterey Bay, are confined to a narrow strip of territory only a few miles long. Also rare and interesting as a relic of an earlier age in southern California is the Torrey pine.

But the heaviest coniferous timber occurs in the mild and rainy belt of Washington and western Oregon; that is, through the Olympic Mountains and the Cascades. Particularly in the region west of Puget Sound, the Douglas fir may attain a height of a hundred feet or more and the forest floor may be so dark that only mosses, ferns, and an occasional shade-loving shrub can live. With it, or

alone, are found the canoe cedar, the coast hemlock, near the coast a spruce, and the Lawson cypress, while on the mountains the firs flourish with some admixture of Engelmann's spruce. In the western ranges of Oregon and Washington, the pines and the western larch are found. Although the character of these great forests of our extreme northwest must of necessity be described briefly and only the names of a few of their trees are listed, the reader may be assured that walking within them and acquainting himself with their grandeur and beauty will be a cherished experience.

Less stupendous but often varied and, in their own setting always beautiful, are the vast coniferous forests of the Rocky Mountains that extend from the Panhandle of Idaho and western Montana nearly to the Mexican border, with an outlying area in the Black Hills of South Dakota. They are, however, confined to slopes high enough to acquire considerable moisture from the westerly winds, and vary greatly in degree of development and in

Oak woodland in the Sierra foothills, near Mother Lode Highway.





Mountain forest near Mount Shasta.

the size of the trees, even for the same species. The juniper is often the last tree extending into the semi-desert conditions of the lower valleys and plains; in the Southwest it is sometimes associated with a pretty, compact, one-needled pine, and together they form veritable forests many miles in extent. In the central Rockies, as in Colorado, the forests may be separated by open grassy areas which have been called "parks" and furnish succulent grazing for great flocks of sheep.

Often these forests cover large areas with pure stands of well-grown trees. Whether adorning the high plains around the Grand Canyon, or climbing the hills among the mountains of Idaho, the yellow pine is easily recognized by its cinnamon-colored bark that breaks off in irregular plates of jigsaw-like shapes, its columnar trunk frequently rising 150-200 feet to the tufted branches, its habit of growing in scattered groups or patches, and also by its

"floor," often clean except for a covering of its own needles of years before.

Almost a weed, the lodgepole pine often grows in dense patches and is spindly in shape, like our crowded weeds, as for example in Yellowstone Park. Yet it may be a stout tree if growing alone on some outcropping rock. A lover of cold atmosphere, it is thoroughly at home at lower levels in Canada, but recedes into the mountains southward, as far as southern California.

Many other conifers are often mixed: the Douglas fir, the spruce (as Engelmann's) and several pines, particularly the Idaho white pine. One of the most striking evergreens because of its gray-blue color—one often seen in contrast with other species along brooks or in ravines—is the Colorado blue spruce. Near the timber line occurs the gnarled and stunted white-stemmed pine, whereas the Douglas fir and the western larch predominate in wet lowlands at the base of the mountain. Larches and

One of the open, grassy areas known as "parks," scattered among the forests of the Rockies. Gunsight Mountain in the background.





Virgin lodgepole pine in Medicine Bow National Forest, Wyoming.

spruce usually grow on low and moist ground, while pines prefer the mountain slopes. However, an alpine larch is found only at the timber line.

Deciduous or Hardwood Forest

Let us now leave the coniferous forests and continue our journey through the *deciduous* forest, especially the great hardwood forest of the east-central United States. As shown (map, p. 6), it extends approximately from the New England states to the Mississippi or slightly beyond, and southward to eastern Texas. It is best seen south of the Ohio River, in such places as the Cumberland and the Great Smoky Mountains of Kentucky, West Virginia and Tennessee. To the east and south, in northern Georgia, Alabama, Mississippi and Louisiana, it merges with the coastal plain pine forests and to the west with



Stand of Colorado blue spruce in the Colorado Rockies.



At the timber line, Long's Peak, Colorado.

prairies along a line marked roughly in the north by the Mississippi River. In the south it extends into Arkansas, Texas and Oklahoma. Northward, many of its hardier elements, together with certain coniferous trees, form the mixed forest of the tier of states between New England and Wisconsin and south along the Appalachians. This mixed forest is characterized by white pine, hemlock, maple, beech, and birch. Elsewhere, as in the southern coastal plain, the pines sometimes are mixed with live oak, magnolia and cypress or, as in California, the live oak and the juniper meet. In the Rockies, poplars and alders may join clumps of spruces on lowland hummocks, while in other parts of the country the mixture of trees present varies with local conditions.

Central and Eastern Region

Although the deciduous forest was originally very extensive, it was later largely cut down to make room for

farming, except for some sizable tracts. The woods that most Americans probably know most intimately are the small remnants of this forest, most commonly seen as farm woodlots throughout the east and the midwest. The commonest trees are oak, hickory, pignut, maple, beech, walnut, ash, birch, red or sweet gum, locust, linden

Typical Kentucky woodland bordering the Cumberland River, an area of maximum development of the deciduous forest.





Rhododendrons in Great Smoky M



Mountains National Park, Tennessee.



Spruce, fir, white pine, and hardwoods on the



opes of the Presidential Range in New Hampshire.



Oaks and maples at Turkey Run State Park, Indiana.

and sycamore, in former times the chestnut, and southward the tulip tree. Many ancestral homes were constructed of the enduring walnut and oak; many hickory logs supplied the fireplace heat. Familiar and loved by many is the steep slope shaded by the gray-branched beech, a rolling sunny stretch of scattered oak or hickory, creeks bordered by maple, ash, walnut, and witch-hazel. If you have not yet seen these woods and the shrubs and wild flowers they harbor, a fresh and delightful travel experience awaits you. Over and over again these and

many other species are found with different shrubs in varying combinations throughout this vast area.

Transition Zone to Grasslands

In the states bordering the west bank of the Mississippi River, from Minnesota to Texas, the transition from the midwestern woods to the Great Plains and Prairies is marked by poplars and cottonwoods, especially along the streams, or by oaks interspersed with much grassland. Certain kinds of oak, red swamp maple, and hickory, as well as other trees, may meet the pine barrens in Georgia, Tennessee and Arkansas, or those along the Gulf of Mexico may contain an occasional magnolia or ash, and even

Prickly pear, buffalo grass and side oats in a field near Dalhart, Texas.



reach into the swamp lands of cypress and white cedar. Here one can only hint at the almost endless variations in kinds and mixture of trees as the conditions of temperature and moisture change, as for example in the sandhills between the Dakotas and Texas.

Southern Region

The traveler to Florida finds the predominantly sandy soil of the peninsula covered with a vegetation continuous with that of the southern coastal plains, consisting of southern pine, live oak, cypress, and cabbage palms, and frequently marked by Spanish moss growing on trees. Citrus groves and rows of planted casuarinas, so-called Australian pines, furnish an exotic touch. As the tip of the peninsula is approached, a different type of vegetation appears, consisting of West Indian elements, such as gumbo-limbo, satinwood, fiddle-wood, figs and stoppers, with royal and thatch palms on limestone soils, seagrape and sea lavender along the beaches, and mangrove swamps along muddy shores. The many tropical plants encountered, such as the poinsettia or Christmas flower, the poinciana, the bougainvilleas, the so-called crotons, are, of course, introduced, as are the coconut and other exotic palms.

The Everglades, a subtropical marsh in Florida, are dotted with low islands supporting broad-leaved trees and shrubs. In places the level stretches of sawgrass are interrupted by deep sloughs densely filled with water plants. In the hammocks, isolated clumps where accumulated humus supports hardwoods, the most magnificent tree is the live oak, with widely spreading, moss-covered branches harboring various climbing plants, ferns, and orchids. Oak, magnolia, yellow poplar, and redgum are usual components of the flora of the numerous hammocks, scattered from one end of Florida to the other. The great swamp formations are either pure stands of cypress or, farther north, mixed stands of cypress and tupelo gum.



**Cabbage palms and caribbean pines in flatwoods, near Marco Junction,
Collier County, Florida.**



Mangrove swamp in the Ten Thousand Islands, Florida.





Live oaks covered with Spanish moss along a creek in Florida.

Grasslands

As we journey across the country anywhere between Canada and Texas, from one forest area to the other, we must pass through a broad belt of open land. The



Bald cypress with "knees," Reelfoot Lake, Tennessee.

Prairie and Great Plains states from the Dakotas to Texas are the natural grasslands of North America and represent a characteristic American landscape. Originally covered with grasses and herbs, they supported herds of antelope and buffalo, the latter in numbers that now seem fantastic. To the west, in Montana, Colorado, Wyoming,



Characteristic prairie landscape, a gulch near Rock River, Wyoming.

and New Mexico, they merge, sometimes imperceptibly, into drier slopes that may be more or less covered with shrubs, the forerunners of the foothill vegetation of the Rocky Mountains. The true prairie lacked trees, except along the larger streams. Westward, these outposts of the deciduous forest consist of willows, cottonwood, and alder.

Western or Sagebrush Regions

In the basin west of the Rockies, the so-called steppes with which the prairie merged pass into semi-desert areas characterized by a mixture of low shrubs, grasses and other herbaceous plants. In the northern part of these valleys, between the mountain ranges, as from Idaho and Washington to Colorado, Utah, and northern Nevada, the characteristic shrub is sagebrush, sometimes mixed with or replaced by rabbit brush. Except in spring, when a small-grass-herb covering appears, the surface of the ground is quite bare. Cottonwoods and willows grow

along the rivers, and higher up the sagebrush often continues into stands of timber, such as those of yellow pine. To the settlers, sagebrush was important, as often it was their only fuel. Many love its peculiar fragrance, which is particularly pungent after the spring rains.

In some parts of the Great Basin, as the sagebrush area is called, stretches of bunch grass and many perennials cover the rolling slopes before the timber appears. On the salty flats characteristic of this region and extending for miles and miles, the sagebrush is replaced by several shrubs capable of enduring the saline quality of the soil. These are greasewood, Suaeda, and rabbit brush. Sometimes saline pools appear and, as the season matures, they are bordered with dense mats of salicornia, bright red in color and visible from far away.

Natural meadow near Rock River, Wyoming.





Juniper trees on south-facing slope of valley in Utah, and chaparral of little sagebrush on the opposite side.

Dry, steep hills in the Rockies and elsewhere are covered by another characteristic association of plants, known in California as "chaparral." It consists of a dense growth of "bush" chiefly of various broad-leaved evergreens, such as species of manzanita and "mountain mahogany" in California, or of dwarf oaks and "mountain mahogany" in the Rockies.

Southwestern Desert

Although continuous with the sagebrush area of the Great Basin, the so-called deserts of the southwest, at

least in southern Texas, Arizona, and westward, are characterized by a totally different climate and a completely different type of vegetation. There millions of plants appear in flower after the rainy season, and in reality most of the deserts harbor a rich plant-life. Three types of these subtropical deserts can conveniently be recognized: the California desert, marked by the creosote bush; the succulent desert, chiefly of Arizona and California, characterized by the abundance of cacti; and the thorn or small tree desert, of California, Nevada and Utah. The real appeal of the desert itself cannot be doubted, regardless of how it is divided according to the plants growing in the different areas. Whether the traveler is visiting the desert in northern Arizona, at the

Chaparral near Anza, Riverside County, California.





Slopes with creosote bush in Death Valley, California.



Sagebrush in northern Arizona.



edge of that vast eroded area of a thousand tints, appropriately named the Painted Desert, or crossing a zone of the bizarre Joshua trees scattered sentinel-like down the long slopes of southwestern Nevada, or in a seemingly endless tract of mesquite and acacia, covering much of Arizona, California and other areas, or feeling lost in the fantastic atmosphere created by a forest of the great columnar cacti, the sahuaro, his sense of beauty will be quickened, his interest aroused!

The more conspicuous plants that attract attention in traveling through some of the vast floor-like deserts of the southwest, especially through southern Arizona, are the resinous evergreen shrub, the creosote bush, the acacia or catclaw, "huishehu," the mesquite, agave and yucca, various cacti such as the barrel and columnar types, and the branched flat-pointed opuntias that are known as chollas.

In certain areas some small trees occur, chiefly the palo

Joshua trees in Arizona.



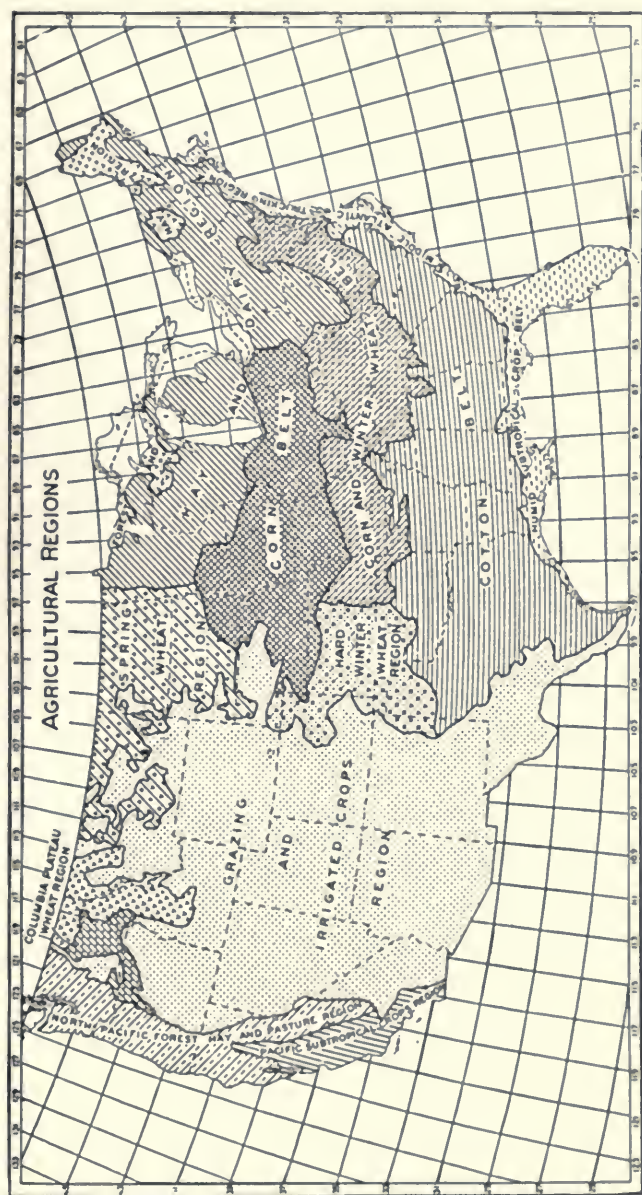


**The changed landscape; farms now occupy land once covered by forests.
Scene near Palouse, Washington.**

verde, so called because of its green bark, and the iron-wood, palo hierro.

Man-made Landscapes

Although traveling across the country no longer implies real hardship, our forefathers often found it difficult, if not hazardous, to penetrate the unknown extensive areas then covered by dense virgin forest. Gradually large sections of these forests were cut and the land was made usable. Today much of this land is cultivated,



The principal crop areas of the United States.

presenting an entirely different appearance. Many native and introduced plants now grow here under the watchful eye of the farmer. While some farmland may support a variety of crops in certain areas, one crop may often be best suited to the local conditions. Thus we come to speak of the midwestern corn belt and the cotton belt of the south, although we know that both corn and cotton are also grown in other parts of the country. Conversely, the observant traveler will note that not all land in any one belt is planted to the principal crop. The uniformity of great forest expanses is never seen where agriculture has taken over the land. Rather, we see various patterns resulting from different kinds of farming (see map, p. 41). The landscape thus created by man in the wake of the original vegetation has become as much a part of our country as its large cities, towns, and farms.

Here we may fittingly conclude our travelogue devoted to some of the more striking formations of plants, especially of forests, seen in the various parts of the country. It is scarcely necessary to remark that the picture presented is fleeting and impressionistic. But we hope that your interest has been aroused and that your future trips will thereby be enriched.

I wish to acknowledge my indebtedness to Dr. B. E. Dahlgren and others, who helped me in preparing this leaflet. Dr. Theodor Just has generously shouldered most of the responsibility in the final selection of illustrations and the ultimate form of the text.

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State Board of Horticulture, Laramie, Wyoming: figures on pages 34, 35.

United States Department of Agriculture, Yearbook of Agriculture, 1928: figure on page 42.

United States Department of the Interior, National Parks Service: figure on inside cover.

United States Forest Service: figures on pages 8, 9, 20, 23, 26, 27.

Helpful Books for the Traveler

General

BOERKER, R. H. D. 1945. *Behold Our Green Mansions*. A Book about American Forests. University of North Carolina Press, Chapel Hill.

Readable account of American forests and their importance in modern life and economy. Good illustrations.

GRAHAM, E. H. 1944. *Natural Principles of Land Use*. Oxford University Press, New York.

Excellent explanation of the scientific principles and modern methods of land use. Profusely illustrated.

MATOON, W. R. 1936. *Forest Trees and Forest Regions of the United States*. U. S. Dept. Agr., Misc. Publ. 217.

Very useful and reliable guide.

VAN DERSAL, W. R. 1943. *The American Land: Its History and Its Uses*. Oxford University Press, New York.

Very informative and well-written book on the American scene, its history, development and future.

Botanical

BOWERS, N. A. 1942. *Cone Bearing Trees of the Pacific Coast*. Whittlesey House Field Guide Series.

Convenient pocket guide, well illustrated.

BROWN, H. P. 1937. *Trees of the Northeastern States*. Christopher Publishing House, Boston.

Detailed descriptions accompanied by fine drawings.

ELIOT, W. A. 1938. *Forest Trees of the Pacific Coast*. G. P. Putnam's Sons, New York.

Good descriptions and many illustrations.

HARLOW, W. M. 1942. *Trees of the Eastern United States and Canada*. Their Woodcraft and Wildlife Uses. McGraw-Hill, New York.

Convenient pocket manual with brief descriptions and illustrations.

HARLOW, W. M. and HARRAR, E. S. 1941. *Textbook of Dendrology Covering the Important Forest Trees of the United States and Canada*. Second edition. McGraw-Hill, New York.

Good descriptions and illustrations of the important species of trees. Detailed bibliography of the literature dealing with trees.

HARRAR, E. S. and J. G. 1946. *Guide to Southern Trees*. Whittlesey House Field Guide Series.

Convenient pocket guide, well illustrated.

JAEGER, E. C. 1941. *Desert Wild Flowers*. Stanford University Press.

KIRKWOOD, J. M. 1930. *Rocky Mountain Trees and Shrubs*. Stanford University Press.

Good descriptions and illustrations of the woody plants growing in this area.

MCMINN, H. E. and MAINO, E. 1935. *An Illustrated Manual of Pacific Coast Trees*. University of California Press, Berkeley.

Detailed descriptions and illustrations of the trees growing in the Pacific Coast Area.

PEATIE, D. C. 1934. *Trees You Want to Know*. Whitman Publishing Co., Racine, Wisconsin.

Smallest pocket guide, beautifully illustrated with colored figures of the most common trees.

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